



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,690		Keisuke Tamura	53375/1385	1879
23838	7590	11/26/2003	EXAMINER	
KENYON & KENYON 1500 K STREET, N.W., SUITE 700 WASHINGTON, DC 20005			FINEMAN, LEE A	
			ART UNIT	PAPER NUMBER

2872

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/812,690

Applicant(s)

TAMURA ET AL.

Examiner

Lee Fineman

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9, 11-16 and 28-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 44 is/are allowed.
- 6) ☒ Claim(s) 9, 12-16, 28-33, 35-42, 45, 46 and 48-56 is/are rejected.
- 7) ☒ Claim(s) 11, 34, 43, 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2872

DETAILED ACTION

This Office Action is in response to an amendment filed 8 September 2003 in paper number 13 in which claims 9, 11-16, 28-31, 33-36 were amended, claims 37-56 were added and claims 7-8 and 17-27 were cancelled. Claims 9, 11-16 and 28-56 are pending.

Claim Objections

1. Claims 11, 28-32 and 43 are objected to because of the following informalities:

In claim 11, line 3 "a sample" should be --the sample-- as was stated in claim 9.

In claim 28, line 9 "sample does not directed" is grammatically incorrect and should be -- sample is not directed--.

The dependent claims inherit the deficiencies of the claims from which they depend.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 33 is rejected under 35 U.S.C. 102(b) as being anticipated by Endou et al., U.S. Patent No. 5,777,783.

Endou et al. discloses an inverted microscope (fig. 1) comprising an objective lens (11); an ocular lens (27b) provided in an observation optical path of the objective lens (fig. 1); a first prism (16a) for directing light reflected from a sample (9) away from the observation optical path

Art Unit: 2872

in a direction other than the ocular lens (17a) so that the light reflected from the sample is not directed to the ocular lens at all (column 7, lines 11-21, when 16a is set to 100/0%, which is a total reflection prism); a second prism (16b) for directing light reflected from the sample along the observation optical path towards the ocular lens (fig. 1); and a moving frame (18) on which the first prism and the second prism are provided, the moving frame exclusively places either the first optical element or second optical element in the observation optical path (column 6, lines 54-60).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12-13, 15-16 and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endou et al. in view of Otaki, et al., Japanese Patent Application Publication No. 08-234110 and DeSimone, U.S. Patent No. 5,933,274.

Endou et al. further discloses an inverted microscope (fig. 1) comprising the objective lens disposed below the sample (9); a first image-forming lens (15) for focusing observation light from said objective lens, said first image-forming lens imaging said observation light at a focal plane; a reflecting mirror (22, column 7, lines 32-34) for directing transmitted light passing through said first image-forming lens to a lens barrel on a front side of the microscope (right side

Art Unit: 2872

of fig. 1) on which a lens-barrel is disposed (27); a first optical element (16a) disposed between said first image-forming lens and said reflecting mirror, for directing light from said first image-forming lens to form an imaging optical path (17a); a port in said microscope, said imaging optical path passing through said port (column 7, lines 26-28); an imaging device (column 7, lines 26-28) coupled to said port, said imaging device having an image plane substantially corresponding to the focal plane of the first image-forming lens (fig. 1); a first light source (14), located on said backside, for emitting excitation light to illuminate the sample via said objective lens; a second optical element (12), a fluorescent cube, disposed in an observation optical path along the optical axis of said objective lens, for directing said excitation light from the first light source to the sample, and for transmitting observation light from the sample (fig. 1). Endou et al. discloses the claimed invention except for the imaging path being on a backside of the microscope, which backside is the opposite side of the front side of the microscope; a second light source for emitting a laser beam incident on the sample via said objective lens; a third optical element disposed in said observation optical path, for directing said laser beam from said second light source to the sample, and for transmitting said observation light from the sample and directing said observation light to said first optical element; a second image-forming lens for said laser beam disposed between said second light source and said third optical element, for focusing said laser beam on the sample; and a lens holder for supporting said second image-forming lens for said laser beam to enable movement of said second image-forming lens for said laser beam in a direction of an optical axis of said laser beam, said lens holder adjusting a position of said second image-forming lens for said laser beam so that said laser beam is focused on an appropriate position for said objective lens.

Art Unit: 2872

It would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the position of the image-taking port to the backside, since it has been held that a mere rearrangement of an element without modification of the operation of the device involves only routine skill in the art. One would have been motivated to rearrange the position of image-taking port for the purpose of reducing the width of the microscope. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Otaki, et al. teaches an inverted microscope (fig. 1) comprising an objective lens (2) under a sample (1); a first light source (11) for emitting excitation light to illuminate the sample, fluorescent cube (DM1); a second light source (14) for emitting a laser beam incident on the sample via said objective lens; an optical element (DM2) disposed in said observation optical path, for directing said laser beam from said second light source to the sample, and for transmitting said observation light from the sample and directing said observation light to said another optical element (15) towards an imaging port. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add the second laser light source and the optical element (DM2), as a third optical element, to the system of Endou et al. to provide a more flexible system with another viewing mode.

DeSimone teaches a microscope (figs. 3a and 3b) with an objective lens (138), a first light source (165, column, 11, line 52) for emitting excitation light to illuminate the sample (161) via the objective lens, a second light source (155) for emitting a laser beam to illuminate the sample via the objective lens, an image-forming lens (20A, 20B) for focusing the laser beam, and a lens holder (76) for supporting the image-forming lens for the laser beam which enables moving the image-forming lens for the laser beam in a direction of an optical axis of the laser

Art Unit: 2872

beam for focusing the laser beam (column 4, lines 25-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to add the image-forming lens and lens holder of DeSimone to the laser light source in the system of Endou et al. and Otaki et al. to provide better focusing of the laser beam. Therefore the second image-forming lens for said laser beam would be disposed between said second light source and said third optical element, for focusing said laser beam on the sample.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above, and further in view of Jörgens, U.S. Patent No. 5,535,052.

Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above, discloses the claimed invention except for a first reflected illuminator coupled to the light source, for directing the light from the first light source, a relay tube coupled to the first reflected illuminator, having a mirror inside for deflecting light emitted from the light source and passed through the first reflected illuminator, and a second reflected illuminator coupled to the relay tube for directing light deflected on the mirror in the relay tube to inside of the microscope. Jörgens teaches an inverted microscope (fig. 2) wherein the image-taking port (37, 40, 46, 47) and the light being directed to it being on the backside of the microscope (fig. 2, right side), which backside is the opposite side of the front side of the microscope (fig. 2, left side) on which the lens-barrel (not numbered) is disposed and a light source (31), a first reflected illuminator (surrounding element 32) coupled to the light source, for directing the light from the light source, a relay tube coupled to the first reflected illuminator (surrounding element 33), having a mirror

Art Unit: 2872

(33) inside for deflecting light emitted from the light source and passed through the first illuminator, and a second reflected illuminator (surrounding elements 34, 35, 36) coupled to the relay tube for directing light deflected on the mirror in the relay tube to inside of the microscope. It would have been obvious to one having ordinary skill in the art at the time the invention was made use a first reflected illuminator, a relay tube with mirror, and a second reflected illuminator and have them located on the backside of the microscope (as well as the image-taking port) as suggested by Jörgens in the system of Endou et al. in view of Otaki et al. and DeSimone to make the system more compact.

7. Claims 9, 28-32, 35, 38-42, 45-46 and 48-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above, and further in view of Takeuchi, U.S. Patent No. 6,337,767 B1.

Regarding claims 9, 38-42, 45-46, 48, 52-53 and 55, Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above further disclose a total transmission prism (column 7, lines 11-21, when 16c is set to 0/100%) wherein the total reflection prism (16a); the total transmission prism (16c) are side by side (fig. 1) in a direction that the moving frame moves and separated by a distance of more than half the diameter of the observation light bundle (the length of element 16b is more than half the diameter of light bundle); and the light rays between the objective lens and first image-forming lens are parallel (fig. 1). Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above disclose the claimed invention except for the moving mechanism moving having both the first and third optical elements mounted and removing the first and third optical elements from the observation beam path at the same time.

Art Unit: 2872

Takeuchi teaches a microscope (fig. 5(a)) with two light sources (55 and 156), an optical element (154), which directs light from a second light source (156) to and from the sample and away from the observation beam path (to detector 53) and a moving mechanism for moving the optical element (154) out of the beam path (column 9, lines 63-67) while moving in an optical element (110) for directing the other light source into the observation beam path (column 7, lines 57-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made modify the moving mechanism of Endou et al. in view of Otaki et al. and DeSimone, as suggested by Takeuchi, to include the third optical element for directing the laser beam from laser light source (the second light source) in the moving mechanism as well as move it together with the first optical element for directing light from the sample away from the observation beam path so that they are not in the beam path at the same time that the second optical element provides excitation light to the observation beam path for the purpose of preventing mixing of the light sources providing better images of the specimen in each view (column 10, lines 7-14).

Regarding claims 28-32, Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above further disclose a first optical component (DM2; Otaki), a dichroic mirror, for directing the laser beam toward a sample along the observation optical path; a second optical component (16c; Endou), which is a total reflection prism, for directing the light reflected from the sample away from the optical observation path in a direction other than the ocular lens so that the light reflected from the sample is not directed to the ocular lens at all. Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above disclose the claimed invention except for the moving mechanism moving having both the first and second optical components mounted in the frame and removing the first and second optical components from the observation beam path

Art Unit: 2872

at the same time. Takeuchi teaches a microscope (fig. 5(a)) with two light sources (55 and 156), an optical component (154), which directs light from a second light source (156) to and from the sample and away from the observation beam path (to detector 53) and a moving mechanism for moving the optical element (154) out of the beam path (column 9, lines 63-67) while moving in an optical element (110) for directing the other light source into the observation beam path (column 7, lines 57-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made modify the moving mechanism of Endou et al. in view of Otaki et al. and DeSimone, as suggested by Takeuchi, to include the first optical component for directing the laser beam from laser light source in the moving mechanism as well as move it together with the first optical component for directing light from the sample away from the observation beam path so that they are not in the beam path at the same time that the second optical element provides excitation light to the observation beam path for the purpose of preventing mixing of the light sources providing better images of the specimen in each view (column 10, lines 7-14).

Regarding claim 35, Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above further discloses a laser (14; Otaki) for emitting a laser beam; an optical element (DM2) for directing the laser beam toward the sample along the observation optical path. Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above, disclose the claimed invention except for the moving mechanism moving the optical element for directing the laser beam from laser light source and the first prism for directing light from the sample away from the observation beam path in and out of the beam path at the same time Takeuchi teaches a microscope (fig. 5(a)) with two light sources (55 and 156), optical element (154), which directs light from a second light source (156) to and from the sample and away from the observation

Art Unit: 2872

beam path (to detector 53) and a moving mechanism for moving the optical element (154) out of the beam path (column 9, lines 63-67) while moving in an optical element (110) for directing the other light source into the observation beam path (column 7, lines 57-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made modify the moving mechanism of Endou et al. in view of Otaki et al. and DeSimone, as suggested by Takeuchi, to include the optical element for directing the laser beam from laser light in the moving mechanism as well as move it together with the first prism for directing light from the sample away from the observation beam path so that they are not in the beam path at the same time as the optical element which provides excitation light to the observation beam path for the purpose of prevent mixing of the light sources providing better images of the specimen in each view (column 10, lines 7-14).

Regarding claims 49-51, 54 and 56, Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above further disclose wherein the fluorescent first light source can be a xenon lamp or a mercury lamp (column 15, lines 5-9) and the second optical element is a fluorescent cube (column 14, lines 48-54 or column 15, lines 5-9) having a dichroic mirror (12a; Endou), an excitation filter (12b; Endou), an absorption filter (12c; Endou) and a relay lens (26; Endou) provided between the lens barrel (27; Endou) and the reflection mirror (22; Endou) for deflecting light from the sample (9; Endou) to the lens barrel (fig. 1; Endou). Regarding claim 54, Endou et al. in view of Otaki et al. and DeSimone as applied to claim 12 above disclose the claimed invention except for the absorption filter being provided between the third optical element and the first image-forming lens. It would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the position of the absorption

Art Unit: 2872

filter, since it has been held that a mere rearrangement of an element without modification of the operation of the device involves only routine skill in the art. One would have been motivated to rearrange the absorption filter for the purpose of more flexibility by being able to more quickly change/replace only that element in the system. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Allowable Subject Matter

8. Claim 44 is allowed.
9. Claims 11 and 43 would be allowable if rewritten to correct the claim objection stated above.
10. Claims 34 and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. The following is an examiner's statement of reasons for allowance: Claims 11, 34, 43-44 and 47 are allowable or have allowable subject matter over the prior art for at least the reasons stated in the previous office action mailed 8 May 2003.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2872

Response to Arguments

12. Applicant's arguments with respect to claim 28-33 and 35 have been considered but are moot in view of the new ground(s) of rejection.

13. Applicant's arguments filed 8 September 2003 have been fully considered but they are not persuasive.

Applicant argues that claims 9, 12-15, 37-42 and 44-45 are allowable based on indicated allowable subject matter in the office action mailed on 19 June 2002. However in the next office action mailed 8 May 2003, the examiner found that a rejection was appropriate for that subject matter which had been added to claim 9.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2872

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (703) 305-5414. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



LAF

November 19, 2003



MARK A. ROBINSON
PRIMARY EXAMINER